Fall 2015

# BIOS 1313

Jacqueline Nesbit
*University of New Orleans*

# The University of New Orleans

## Department of Biological Sciences

Human Anatomy & Physiology Lecture, Part 2

Fall 2015 Education Bldg Rm 203

TTh 11:00am-12:15pm

BIOS 1313, section 001

THE HEARTBEAT *of the* CRESCENT CITY

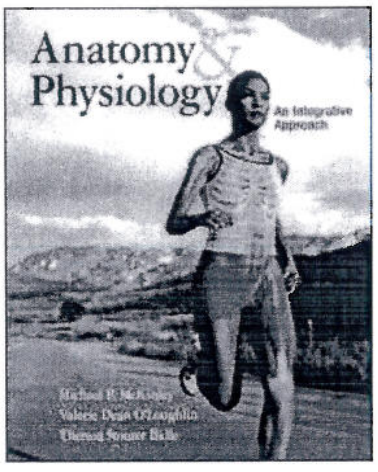
### Instructor

**Dr. Nesbit** (Preferred contact via e-mail listed below) Office: Biological Sciences Building, Room 230 Phone: (504) 280-6478
Email: jbnesbit@uno.edu
Office Hours: M T W 12:30 - 2:30

### Course Description

This course is a continuation of Bios 1303 with focus on the following organ systems: autonomic nervous system, endocrine system, the cardiovascular and respiratory systems, lymphatic, urinary, digestive systems as well as the reproductive system. This course is geared toward pre-professional majors, such as pre-medicine, pre-dental, pre-veterinarian and Allied Health majors. However; it is not confined to those students. The prerequisite for this class is a C or better in Bios 1303, or an equivalent course from another institution.

### Textbooks & Resources Required




*Anatomy & Physiology: An Integrated Approach. 1st* ISBN 978-0073054612.
You will also be required to purchase the McGraw-Hill Connect On-Line Resource. The cost is $110 if you purchase directly from this website. Note: this option gives you an e-text and SmartBook.

Please go to the following link for directions and information. In addition, a copy of the registration details can be found on Moodle.

http://connect.mheducation.com/class/j-nesbit-copy-ofspring-2014

If you wish to have to purchase an actual book, you can purchase a loose leaf version from Connect for $80 (this is in addtion to the code) so this brings your total to $190.

The UNO Bookstore sells bundles of the hardcover and code for approximately $250.

Your Connect code is active for one year so if your were enrolled in Bios 1303 last semester, your code is still active.

## Course Objectives

By the end of this course students will be able to:

Compare and contrast the SNS and the ANS and describe how the two-neuron chain in the ANS facilitates communication and control.

Describe the general functions of the parasympathetic and sympathetic divisions of the ANS.

Compare and contrast the anatomic differences in the motor neurons and associated ganglia of the parasympathetic and sympathetic divisions.

Compare and contrast the actions of the nervous system and the endocrine system to control body functions.

Name the three structural categories of homrones, give examples in each category and distinguish the actions of lipid-soluble versus water-soluble hormones.

Describe the anatomic relationship of the hypothalamus and pituitary gland.

Describe the homeostatic system involving insulin/glucagon, thyroid hormone and cortisol.

Describe the characteristics and components of blood.

Define hemopoiesis and explain the role of colony-stimulating factors.

Differentiate between the three primary types of blood vessels, describe the general structure of the heart and trace blood flow through the pulmonary and systemic circuits.

List and describe the events of the cardiac cycle.

Define blood pressure and the blood pressure gradient.

Describe lymph and its contents and explain how lymph enters lymphatic capillaries.

Distinguish between structural and functional organization of the respiratory system.

Give an overview of the process of pulmonary ventilation.

Explain how pressure gradients and resistance determin airflow.

Define partial pressure and the movement of gases relative to partial pressure gradients.

Describe the components of the nephron.

Compare and contrast the renal processes of filtration, reabsorption and secretion.

Identify and describe the functions of the primary and accessory organs of the digestive system.

Describe the gross anatomy of the ovary and testis.

Course Policies and Expectations

## Attendance:

Attendance is mandatory for all 1000/2000 level classes. You will not receive extra points for attendance. However, please see the grading rubric for the benefit of excellent attendance. There are no make-ups for exams. If an emergency forces you to miss an exam, then you may be allowed a make-up exam only with a valid and documented excuse, i.e. a written note from a physician or nurse at the University Health Center stating:

1. the suspected nature of the illness
2. The suspected severity of the illness, i.e., that the illness could be severe enough to warrant missing class.

## Academic Integrity:

Students are expected to conduct themselves according to the principles of academic integrity as defined in the statement on Academic Dishonesty in the UNO Student Code of Conduct. Any student or group found to have committed an act of academic dishonesty shall have their case turned over to the Office of Student Accountability and Advocacy for disciplinary action which may result in penalties as severe as indefinite suspension from the University. Academic dishonesty includes, but is not limited to: cheating, plagiarism, fabrication, or misrepresentation, and being an accessory to an act of academic dishonesty. The University of New Orleans Student Code of Conduct can be found at http://www.uno.edu/studentaffairs/sadocuments/studentcodeofconduct.pdf and should be consulted if there are any questions.

**Please Note: I have ZERO tolerance for cheating during an exam. I will STRICTLY enforce the following rules:**

**1. I will give ONE warning for wandering eyes. It will sound like this: "Keep your eyes on your own exam". After that, I will take your exam and you will receive a zero.**

**2. There will be NO cell phones in your lap, on your desk, in your pocket, or on the floor. Your cell phones are to be silenced and stored out of reach in your purse or backpack. If I see a cell phone out during an exam, I will take your exam and you will receive a zero.**

**3. Do not wear a hat during an exam.**

**4. Do not be late for an exam. Once the first student has finished an exam and left the room, the door will be locked and no one will be allowed to take an exam after that time.**

**5. Do not ask to leave once you have begun your exam. You make not take a restroom break during the exam so take care of business before you arrive.**

## Students with Disabilities:

The Office of Disability Services (ODS), in conjunction with the Office of Academic Affairs' campus wide administrative policy regarding the accommodations of students with disabilities, has two primary objectives: 1) to ensure compliance with Section 504 of the 1973 Rehabilitation Act and the Americans with Disabilities Act (ADA) in regard to equal access for qualified students to academic programs; and 2) to uphold the academic integrity of UNO. When these two objectives are met, those students who qualify for services based on clear, comprehensive, and relevant documentation will receive those services or academic modifications for which they are legally entitled.

ODS is considered the University's designated office for determining eligibility for services, reviewing and maintaining documentation, and recommending appropriate accommodations. Students, however, do not have to register with ODS in order to advocate for disability related accommodations. For those instructors who have students with disabilities who choose not to register for services with ODS, and who request academic accommodations, ODS is available as a resource to verify eligibility and recommend appropriate accommodations.

Part of this policy regulates the accommodative testing services. These accommodations are made available in the ODS Accommodative Testing and Adaptive Technology Center (ATATC), located in the Library Room 120. The breakdown of responsibility for ensuring efficient and secure accommodative testing in the ATATC is as follows:

Registered ODS students should:

1. Request from ODS in writing Accommodation Agreements each semester. 2. Set up appointments to meet with each instructor each semester to discuss accommodations and complete agreements.
3. Ensure each party involved receives their copy of the Agreement.
4. Complete Student Section of the Accommodative Testing Form for each test.
5. Arrive promptly at the ATATC and follow test proctor's instructions.

## Classroom Etiquette:

1. Please refrain from using your cell phone during class.
2. Please avoid any disruptive behavior.
3. Hostile, harassing and non-inclusive language will not be tolerated. If any of these violations are severe enough, the student and the case can be referred to the Office of Student Accountability and Advocacy, and have possible judiciary consequences.

Once again the University of New Orleans Student code of conduct outlines this process and should be referred to if there are questions. The University of New Orleans Student Code of Conduct can be found at http://www.uno.edu/studentaffairs/sa-documents/studentcodeofconduct.pdf.

## Conflict Resolution

All conflicts must be resolved in a civil, meaningful manner. Whether the conflict is between students or between student and an instructor, the conflict should be resolved in a private, yet safe environment. If a conflict between students cannot be resolved by the parties alone, then the instructor should step in or be consulted, to either resolve the conflict or direct it to the appropriate resources. If the conflict is between instructor and student, and the conflict cannot be resolved privately, additional consultation may be needed from the chair of the Biological Department, Dr. Wendy Schluchter. Dr. Schluchter can be contacted via email at wschluch@uno.edu.

## Student Responsibility

It is the responsibility of the student to come prepared for lecture. The student will have already read the appropriate section of the text that corresponds to the lecture topic of the day. Students will arrive to class in a timely manner and display conduct that shows repect for the instructor as well as the other classmates.

"Who you are tomorrow begins with what you do today." Tim Fargo

## Instructor Responsibility

As instructors at the University of New Orleans, it is our responsibility to provide students with the best education possible. It is the instructor's responsibility to ensure that each student has an equal opportunity to learn in a safe educational background. As instructors we will arrive to class on time, we will be prompt with grading and returning exams. Every instructor will keep at least 4 hours per week set aside for students to seek additional help or instruction. It is the responsibility of the instructor to answer a student's question to the best of their ability or be able to direct the student to that appropriate resource to answer the question. Instructors will notshow bias to any student with regards to gender, race, nationality, sexual orientation/identification or age. All students will be treated fairly and equally.

## Exams & Bonus Points

Exams:

There will be four (4) exams in the class. Each exam is worth 100 points and will consist of a combination of multiple choice, matching, true/false and short answer types of questions. You will need a GREEN scantron and a number 2 pencil for all exams. You will have one complete class period to finish your exam (75 minutes). Note: Because there is an optional final exam, one exam grade will be dropped. This means that if you are happy with your grade after exam 4, then you do not have to take the final exam. So, the final exam is your dropped grade. On the other hand, if you are NOT happy with your grade after exam four, you can take the final exam in hopes of boosting your grade. I will drop the lowest exam grade of the five. Taking the final cannot hurt your grade. Please see under academic integrity my rules for taking exams. I will adhere strictly to these rules.

Final Exam:

There is an OPTIONAL final exam. The final is cumulative and multiple choice questions only. Note the date is Tuesday, Dec 8 at 10:00. While there is a two hour time slot for this exam, you are not allowed a leisure arrival time. The exam begins at 10:00 sharp. DO NOT BE LATE! You will not be allowed to take the exam if any student has already completed his/her exam and left the room. NO EXCEPTIONS!

Exam Keys:

I will return your exam scantron in a timely manner. If you would like a copy of the written portion of the exam, you may come to my office and retrieve one. Please note, however, you will only be allowed to retrieve the exam copy up until the date of the next exam. For instance, if you wish to have a copy of exam one, then you have until the date of exam 2 to pick up the copy. After exam two is administered, exam one is no longer available to you. This is to prevent students bombarding me at the end of the semester (a very busy time for me) with requests for all of the copies of exams. The exam keys will be posted on my door. Please do not take this key farther than the table outside of my office. The keys are for ALL students to use so please keep it available for ALL students to use.

Bonus Points:

Students may earn two (2) bonus points for each LearnSmart module completed. These modules can be found on your McGraw-Hill Connect homepage under BONUS MODULES. The material in the modules corresponds to the chapters in the textbook that we will be covering in lecture. These are meant to be used as study tools for each of the exams. Consequently, they have due dates that correspond to the respective exam dates. Pay close attention to the due dates as I strictly adhere to them. I will make no exception so do not ask if you can complete them after the due date.

The two bonus points per module will be added to the respective exam grade. You may also earn partial credit. Partial credit will be awarded according to the percentage of the module completed. For example, if you complete 50% of the module, then you will earn 1 point.

## Grading Rubric

### Final Grade

There are a total of 400 points for the class.

89.45 - 100% is an A and corresponds to exceptional effort.
79.45 - 89.44 is a B and and corresponds to above average effort.
69.45 - 79.44 is a C and corresponds to average effort.
59.45 - 69.44 is a D and corresponds to below average effort.
Anything below a 59.44% is a F, which corresponds to an inadequate amount of effort.

To determine the amount of points needed to "get an A or a B or to pass this class", simply multiply the total points possible (400) by the percentage you are trying to determine. For example, if you are trying to determine if you can get an A in the class, multply 400 by 89.45%. This equals 357.8. If after three exams, your total points is 244, then you need (357.8 - 244) 113.8 points on exam 4 to get an A. In other words, it's impossible.

If you have less than three absences for the semester, then the grading rubric is as follows:

88.45 - 100% A
78.45 - 88.44% B
68.45 - 78.44% C
58.45 - 68.44% D
58.44 and below F

Any exam grade that you see posted on Moodle already includes any bonus points you may have earned.

### Study Guide

**I will not hand out a formal study guide. Use the following weekly class schedule as your guide to determine what material you must understand for each exam. If it is on the weekly class schedule, it is fair game for the exam.**
**In addition, I STRONGLY recommend doing the Practice Exams as many times as possible as a study method. Unlike the LearnSmart modules, I hand pick EACH question for the practice exams so it is like me telling you what to study and the level of understanding necessary for that particular subject. You can find these exams on your McGraw-Hill Connect homepage under Practice Exams. These have no due date because you do not receive points for them. Rather, doing them will BOOST your exam grade.**

## Weekly Class Schedule

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|---|---|
| Aug 20 | Section 10.10 Smooth Muscle<br>Section 15.1 Comparison of the Somatic and Autonomic Nervous Systems |
| Aug 25/27 | Section 15.2 Divisions of the Autonomic Nervous System<br>Section 15.3 Parasympathetic Division<br>Section 15.4 Sympathetic Division<br>Section 15.5 Comparison of Neurotransmitters and Receptors of the Two Divisions<br>Section 15.7 Control & Integration of Autonomic System Function<br>Clinical View:Horner Syndrome & Raynaud Syndrome |
| Sep 1/3 | Section 17.1 Introduction to the Endocrine System<br>Section 17.2 Endocrine Glands<br>Section 17.3 Hormones<br>Section 17.4 Hormone Transport<br>Section 17.5 Target Cells: Interactions with Hormones<br>Section 17.6 Target Cells: Degree of Cellular Responses<br>Section 17.7 Nutrient Metabolism<br>Section 17.10 Pancreatic Hormones<br>Clinical View: Conditions Resulting in Abnormal Blood Glucose Levels |
| Sep 8/10 | Section 17.8 The Hypothalamus and the Pituitary Gland<br>Section 17.9b Thyroid Gland & Thyroid Hormone<br>Clinical View: Disorders of Thyroid Hormone Secretion<br>Section 17.9c Adrenal Glands and Cortisol<br>Clinical View: Disorders in Adrenal Cortex Hormone Secretion<br>Clinical View:TheStressResponse |
| **Sep 15** | **Exam I** |
| Sep 17 | Section 18.1 Functions & General Composition of Blood<br>Section 18.2 Composition of Blood Plasma<br>Section 18.3 Formed Elements in the Blood<br>Clinical View: Blood Doping<br>Clinical View: Erthrocyte Volume Disorders<br>Clinical View: Leukemia |
| Sep 22/24 | Section 19.1 Introduction to the Cardiovascular System<br>Clinical View: Systemic & Pulmonary Edema<br>Section 19.2 Location of the Heart and the Pericardium<br>Clinical View: Pericarditis<br>Section 19.3 Heart Anatomy<br>Section 19.4 Coronary Vessels<br>Clinical View: Angina Pecoris & Myocardial Infarction<br>Section 19.5 Anatomic Structures Controlling Heart Activity<br>Clinical View: Heart Sounds and Heart Murmurs |

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| | Section 19.6 Stimulation of the Heart<br>Section 19.7 Cardiac Muscle Cells<br>Clinical View: Cardiac Arrhythimia Clinical<br>View: Heart Blocks<br>Section 19.8 The Cardiac Cycle<br>Section 19.9 Cardiac Output<br>Clinical View: Bradycardia and Tachycardia |
| Sep 29<br>Oct 1 | Section 20.1 Structure & Function of Blood Vessels<br>Clinical View: Atherosclerosis<br>Clinical View: Aneurysm<br>Section 20.2 Capillary Exchange<br>Section 20.3 Local Blood Flow<br>Section 20.4 Blood Pressure, Resistance & Total Blood Flow<br>Section 120.5 Regulation of Blood Pressure & Blood Flow<br>Section 20.7 Blood Flow Distribution During Exercise<br>Clinical Views: Hypertension & Hypotension, Deep Vein Thrombosis, Varicose Veins & Circulatory Shock |
| **Oct 6** | **Exam 2** |
| Oct 8 | Section 21.1 Lymph & Lymph Vessels<br>Section 21.3 Primary Lymphatic Structures<br>Section 21.4 Secondary Lymphatic Structures<br>Clinical Views: Metastasis, Lymphoma & Lymphedema<br>Section 23.1 Introduction to the Respiratory System |
| Oct 13 | Section 23.2 Upper Respiratory Tract<br>Section 23.3 Lower Respiratory Tract<br>Clincial Views: Bronchitis, Asthma & Smoking & Lung Cancer<br>Section 23.5 Respiration: Pulmonary Ventilation<br>Clinical View: Pneuothorax and Atelectasis |
| **Oct 15** | **Mid-Semester Break** |
| Oct 20/22 | Section 23.6 Respiration: Alveolar & Systemic Gas Exchange Clinical View: Emphysema<br>Section 23.7 Respiration: Gas Transport<br><br>Section 25.1 Body Fluids<br>Section 25.2 Fluid Balance<br>Section 25.4 Hormonal Regulation<br>Clinical View: Intravenous Solutions & Diabetes Insipidus |
| Oct 27 | Section 24.1 Introduction to the Urinary System<br>Section 24.2 Gross Anatomy of the Kidney<br>Clinical Views: Kidney Variations & Anomalies, Renal Ptosis Section 24.3 Functional Anatomy of the Kidney |
| **Oct 29** | **Exam 3** |

## Weekly Class Schedule

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|---|---|
| Nov 3/5 | Section 24.4 Blood Flow & Filtered Fluid Flow<br>Section 24.5 Production of Filtrate Within the Renal Corpuscle<br>Section 24.6a - d Reabsorption & Secretion in Tubules & Collecting Ducts<br>Clinical View: Glucosuria<br>Section 25.3 Electrolyte Balance<br>Section 25.5 Acid-Base Balance<br>Clinical View: Vomiting & Diarrhea |
| Nov 10/12 | Section 24.7 Evaluating Kidney Function<br>Clinical View: Renal Failure, Dialysis & Kidney Transplant<br>Section 24.8 Urine Characteristics, Transport, Storage & Elimination<br>Clinical Views: Intravenous Pyelogram, Renal Calculi, UTIs & Impaired Urination<br>Section 26.1 Introduction to the Digestive System |
| Nov 17/19 | Section 26.2 Upper GI Tract<br>Clinical Views: Gastroesophageal Reflux Disease & Peptic Ulcers Section 26.3 Lower GI Tract & Accessory Organs<br>Clincial Views: Cirrhosis of the Liver, Gallstones, Colon Cancer & Diverticulitisn & Celiac Disease<br>Section 27.4 Functions of the Liver<br>Clinical View: Blood Cholesterol Levels<br>Section 26.4 Nutrients & Their Digestion |
| Nov 24 | Section 28.1 Overview of Female & Male Reproductive Systems<br>Section 28.2 Gametogenesis<br>Section 28.3 Female Reproductive System<br>Clinical Views: Ovarian & Cervical Cancer & Tubal Pregnancy & Endometriosis |
| **Nov 26** | **Thanksgiving** |
| Dec 2 | Section 28.4 Male Reproductive System<br>Clinical Views: Contraception Methods & STDs & Prostate Cancer Section 29.1 Overview of the Prenatal Period<br>Section 29.2 Pre-Embryonic Period<br>Section 29.3 Embryonic Period<br>Section 29.4 Fetal Period<br>Clinical View: Infertility & Infertility Treatments |
| **Dec 3** | **Exam 4** |
| **Dec 8** | **Final Exam 10:00 a.m. SHARP!** |

## Student Learning Support

**Office Hours:**

I am available to answer questions during my office hours. This time is set aside specifically for student support and should be utilized.

**Appointment Hours:**

If you are having difficulty coordinating your schedule with my office hours, then a specific appointment can be made. An email is the best way to schedule an appointment.

**Science Tutoring Center:**

Science building room 207 is the home of the Science tutoring center. There is no specific A&P program, but there are graduate and undergraduate students who facilitate the center and may be of assistance if other avenues are exhausted.

**Note: Segments of this syllabus have been adopted from the syllabi of other faculty and it is subject for revision upon the instructor's need.**